



**A SURVEY STUDY ON NITHIRAI OZHUKKAM (SLEEP
HYGIENE FACTORS) AND INFLUENCES OF IT ON A QUALITY
SLEEP**

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ABSTRACT

Background: Sleep hygiene factors is defined as the activities performed by an individual from previous night to next day morning as enunciated in *Noi illa Neri* text. Paralleling the rise in indecorous sleep hygiene factors is equal to rapid decline in the physical and mental health of people. Prior research was conducted a study among office workers to assess the lifestyle habits and job environment on sleep. In this study, the sample was concentrated on a particular group and therefore the results cannot be generalized for common people.

Aim: The aim of the study is to assess the Knowledge, attitude, and practice of Siddha sleep hygiene factors among study population by a questionnaire and to evaluate the relationship between the symptoms presented and noncompliance sleep hygiene factors.

Methods: A questionnaire was designed to garner information about sleep hygiene factors among college students, Personnel from Hospitals, and IT firms.

Results: Descriptive analysis indicated that majority of the people failed to follow the sleep hygiene factors and the ill effects of sleep deprivation was observed in those foregoing their bedtime as enunciated in the literature.

Conclusion: Good sleeping habits are fundamental for a sound and healthy lifestyle.

Keywords: *Sleep hygiene factors, questionnaire, sleep deprivation, lifestyle disorders, Siddha*

INTRODUCTION

Lifestyle is a way adopted by the people which includes day to day behaviors, individual's activities, diet, and sleep hygiene factors. It plays a significant role in physical and mental health of human being. Millions of people have started running like a machine to lead a rich life. Emerging new technologies like internet and virtual communication networks made people to forget to be conservative in their lifestyle habits. Besides, night shift work has become more prevalent nowadays. Lifestyle modification and a sedentary behavior made them to forget the proper sleep hygiene factors in their day-to-day life.

Siddhars insisted about the practice of "*Pini Anugavithi*", namely *Kaala ozhukkam and Naal Ozhukkam* for a salubrious lifestyle. *Nithirai ozhukkam* (Sleep hygiene factors) is being one of the components which describes about the activities performed by an individual from previous night to next day morning.

Pathartha Guna Chinthamani states about the concepts of sleep hygiene factors to prevent the derangements of three humours in our body, which in turn helps to regulate person's biological clock and attune the body to a Circadian rhythm.[1]

Akiyoshi Shimura et al. affirmed that significant sleep hygiene factors factors were total sleep time on workdays and free days, irregular mealtime, night cap, not eating vegetables every day, lack of sunlight in the morning in the bedroom, waking up before the dawn, electronic display in the bed and daily caffeine intake.[2]

The consequences of lack of sleep such as debilitation of five sense organs, impairment of cognitive function, reduced life span and impairment in sexual health are outlined in the literature.[1]

As per World Health Organization and World Economic Forum's report India is facing lifestyle disorders like heart disease, stroke, diabetes, respiratory infections, hypertension, and sleep disorders on compromising lifestyle habits. Shibata R et al. stated that the sleep disorder is associated with life-style related diseases including obesity, insulin resistance and atherosclerosis.[3]

Therefore, the lack of practice of sleep hygiene factors may be a reason for the high prevalence of lifestyle disorders.

MATERIALS AND METHODS

We designed a questionnaire of about 24 questions in google forms based on sleep hygiene factors enunciated in siddha literature, *Noi Illa Neri*. Descriptive analysis was used to analyze the relationship between sleep hygiene factors and impact of deranged sleep hygiene factors. The study was approved by the Institutional Ethics Committee for the conduction of the study.

Inclusion criteria

Personnel from IT firms, Hospital and college students aged above 18 were included in the study.

Exclusion criteria

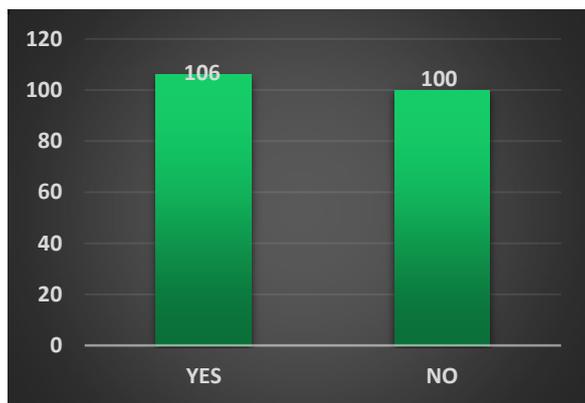
Persons aged above 65 years and those who are under the medication of neuroleptic drugs were excluded from the study.

OBSERVATION &RESULTS

A total of 206 persons were participated in the study. About 69% participants were female and 31% were male.

As per chart 1, 51% participants were found to be involved in physical activities and 49% were sedentary.

Chart 1 showing the number of participants involved in physical activities



44% were found to consume dosa, 27% were rice, 18% were chappati and 11% were idly whereas 61% does not have the habit of going for stroll and 39% were found to have this habit.

Chart 2 showing the (i) consumption of food for dinner and (ii) habit of going for stroll after dinner



(i)

(ii)

As per chart 3 & 4, 75% participants were found to eat by 8-10pm, 13% by 10-12pm, 11% by 6-8pm and 1% after 12pm whereas 37% were found to sleep by 11-12pm, 28% by 10-11pm, 22% sleeps after 12pm and 13% by 9-10pm.

Chart 3 showing the routine dinner time

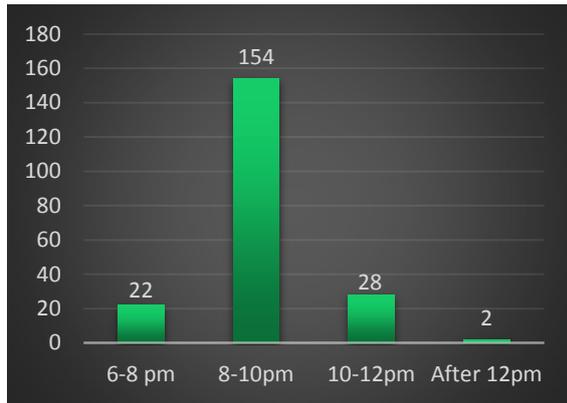
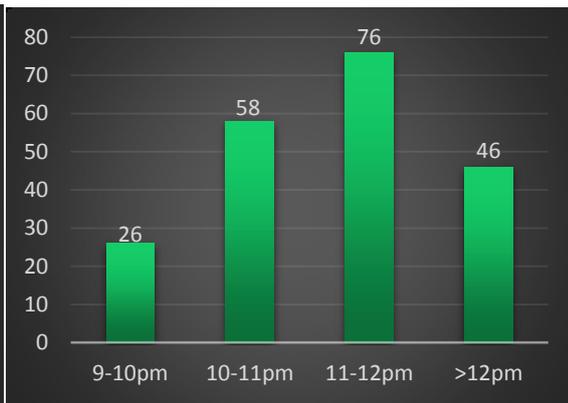
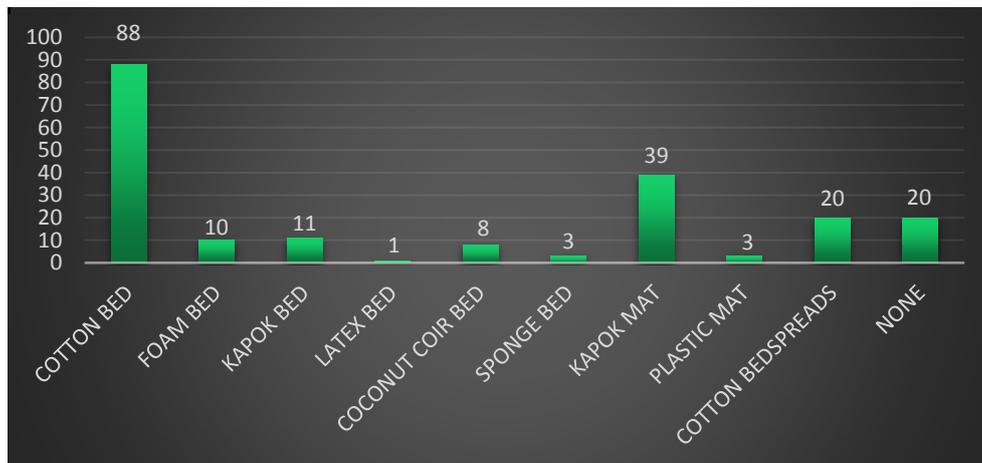


Chart 4 showing the routine bed time



43% participants were found to use cotton bed, 19% uses kapok mat, 10% uses cotton bedspreads, 5% uses kapok and foam bed, 4% uses coconut coir bed, 1% uses latex, sponge bed and plastic mat whereas 11% does not use any of these materials for sleeping. They lie simply on the floor.

Chart 5 showing the materials used for sleeping



As per chart 6 & 7, 92% participants were found to use pillows and 17 does not use whereas 52% participants covers the blanket up to neck, 24% covers the entire body and the rest of the participants does not have the habit of using blankets.

Chart 6 showing (i) the use of pillows and (ii) the way of use of blankets

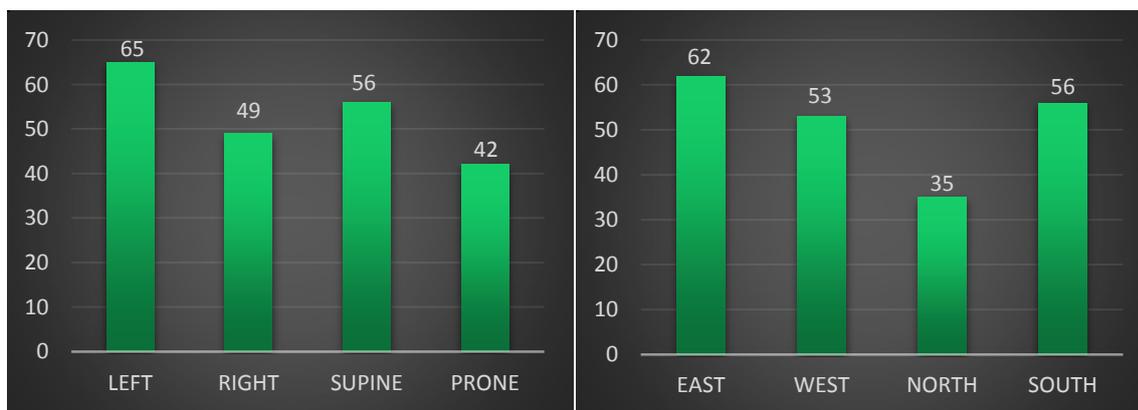


(i)

(ii)

About 32% participants lie on their left side while sleeping, 27% on supine position, 21% on their right side and 20% on prone position whereas 30% places their head on east direction, 27% on south, 26% on west and 17% on north direction.

Chart 8 showing (i) position while lying and (ii) the direction of head while sleeping

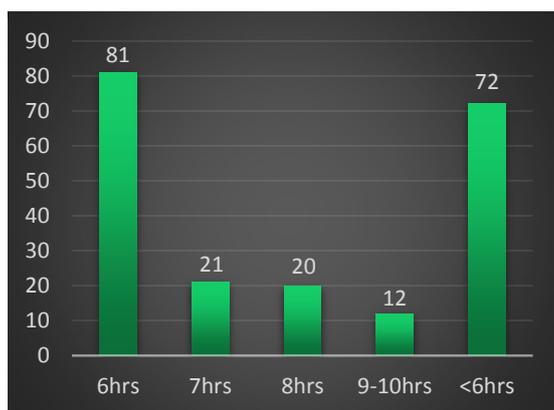


(i)

(ii)

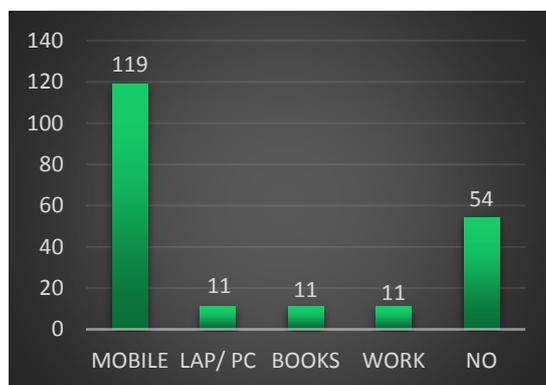
39% participants were found to sleep for 6 hours, 35% sleeps below 6 hours, 20% found to sleep for 7 - 8hours, 6% sleeps more than 9 hours.

Chart 9 showing the duration of sleep



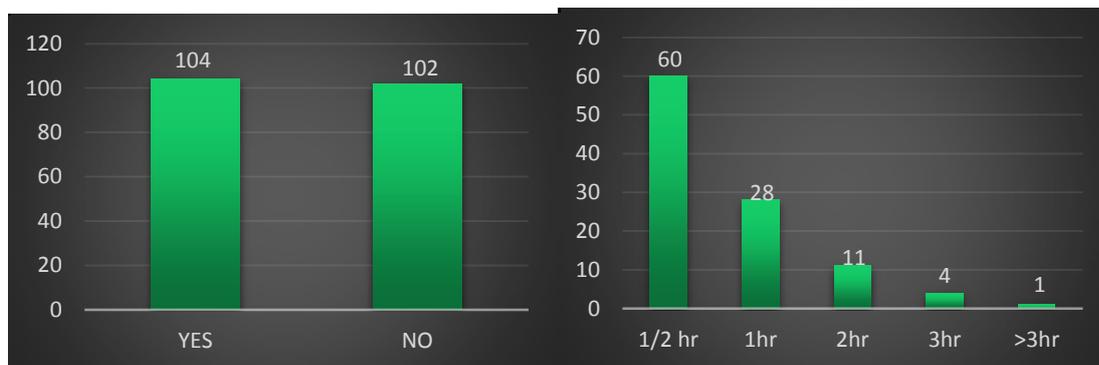
About 74% participants were foregoing their bedtime and 26% does not. In that 74% participants 59% spends with mobile phones, 5% with Lap, books and 5% were found to go for night shift works.

Chart 10 showing the ways of foregoing bedtime



About 50.48% experiences a disturbed sleep and 49.51% does not. Among the participants who were experiencing a disturbed sleep, 29% reverts back to sleep in half an hour, 14% needs 1 hour to continue their sleep, 5% needs 2 hours and 2% needs 3 hours.

Chart 11 (i) showing the frequency of disturbed sleep and (ii) the duration of time in which they reverts back to sleep

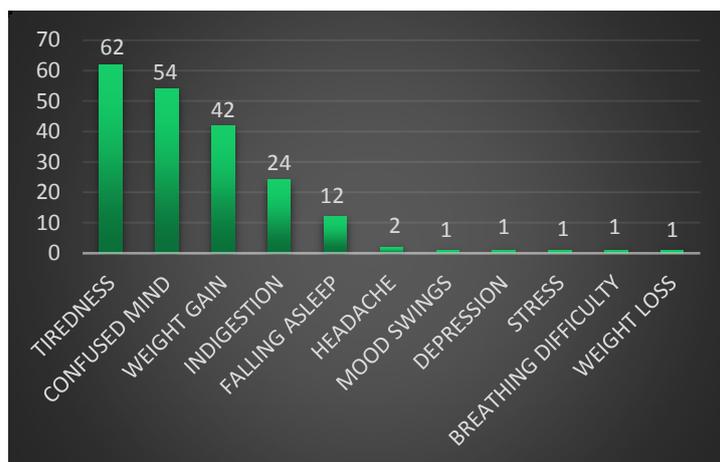


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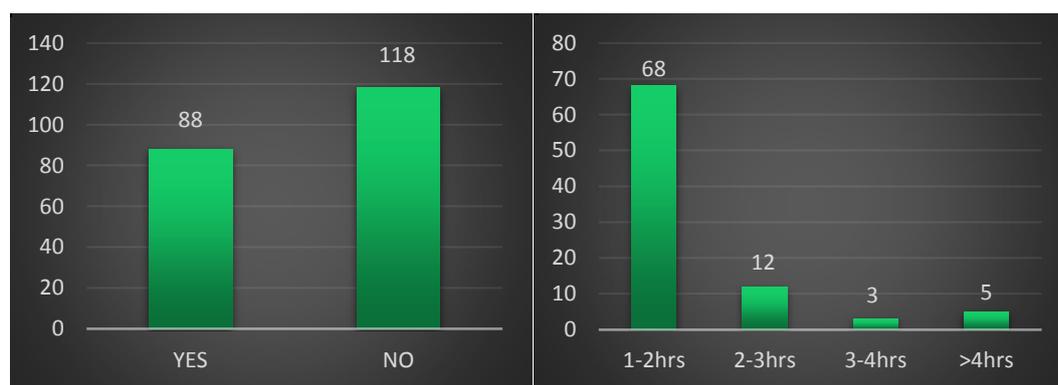
As per chart 12, 22% participants had tiredness, 19% had confused mind, 15% gained their weight, 9% had indigestion, 4% were falling asleep and 1% had headache, mood swings, depression, stress, weight loss and breathing difficulty.

Chart 12 Showing the symptoms of sleep deprivation



As per chart 13, 43% participants found to have the habit of taking daytime naps. Among them 33% sleeps for 1-2 hrs, 6% for 2-3 hrs and 2% participants sleeps and 57% does not have the habit.

Chart 13 showing (i) the habit of daytime naps and (ii) frequency of duration of daytime naps

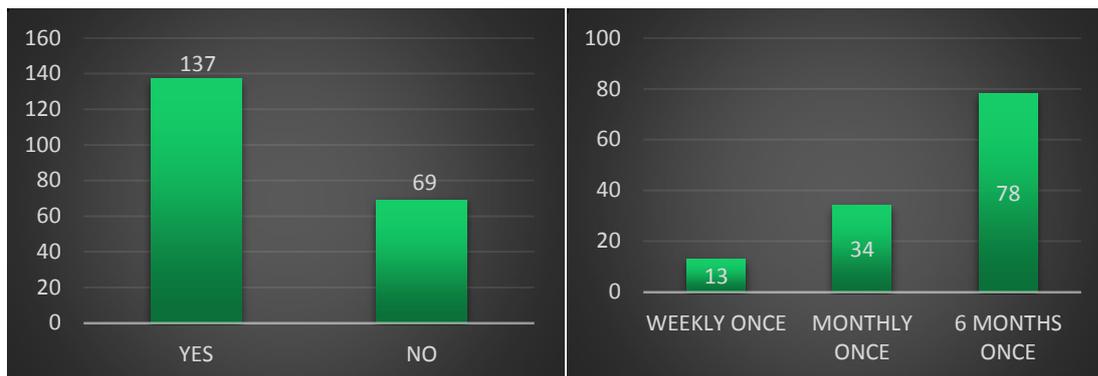


(i)

(ii)

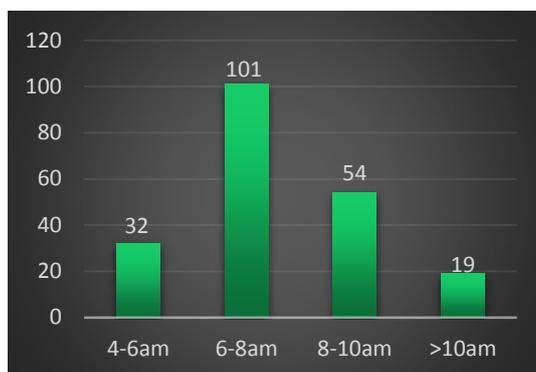
As per chart 14, 61% were found to have a habit of taking oil bath and 39% does not have this habit. Among that 61%, 35% participants have the habit of taking it 6 months once, 17% have the habit of taking it monthly once and 7% have the habit of taking it weekly once.

Chart 14 showing the habit of oleation and the frequency of oleation



As per chart 15, 49% have the habit of waking up by 6-8am, 26% wakes up by 8-10am, 16% wakes up 4-6am and 9% participants wakes up after 10am.

Chart 15 showing the wake up time



DISCUSSION

As enunciated in [1] physical exercises were recommended in evening whereas Yoga is ideal to be practiced in the morning. Darren E.R. Warburton et al. Spelled out that the regular physical activity contributes to the primary and secondary prevention of several chronic diseases and a reduced risk of premature death.[4] But KAP study revealed that 51% subjects involved in physical activity and the rest does not have the habit of it. Consumption of dinner within 9pm is ideal is outlined in [1]. KAP study revealed that 75% followed as enunciated above.[1] emphasized about stroll after dinner. Stroll improves digestion, boosts metabolism, helps to fall asleep and relieves mental stress. But study revealed that only 39% of people have the habit of going for a stroll.[1] stated that beds/ mat is ideal for sleeping. Among the study population 58% uses it for sleeping. The literature clearly stated kapok is an ideal material to be used for bed/ mat. Eric wei Chiang Chan et al spelled out that multiples uses of Kapok cotton but it is well known for its antipyretic activity. So, this

material is preferred to be used as a mattress.[5] But KAP study revealed 12% participants were found to use kapok material and the rest prefers some other materials.

Nestling the head on pillows during sleep is being outlined in the sleep hygiene factors [1] whereas study showed that 92% used it. [1] stated that blankets should be used to cover upto neck during sleep. Study showed 52% followed the same as quoted in literature. Lying on *left side* is an ideal position for sleeping.[1] Sleeping in the front position can be avoided because of the respiratory movements of the rib cage require more energy expenditure as it elevates the body against gravity in the front position. Lying on the right side can be avoided as it may paves a way for causing heart burn.[6]KAP study revealed that only 32% participants lies on the left side position.The best direction of head position during sleep is *East*, whereas west direction leads to disturbed sleep and north results in diseases.[1]Moosavi S.M et al. stated that there was a strong relationship between difficulties in falling asleep and geographical direction of sleep by using Pittsburg sleep Quality Inventory (PSQI).[7] Study reported that 30% had the practice of having the head end at east direction and 70% does not followed this direction while sleeping.[3] states that individual must sleep within 10pm.But among study population 13% followed this habit and 87% did not followed it.

Among study population 74% forego their bedtime whereas 26% did not have this habit. Among these majority of the people spent their bedtime on screens. KAP study revealed that 57% experienced disturbed sleep and 43% did not among study population.[3] stated that sleep deprivation leads to tiredness, confused mind, falling asleep and lean physique. Lissak G stated that excessive digital media use by children and adolescents appears as a major factor which may hamper the formation of psycho-physiological resilience. [8]

Aguirre CC et al. affirmed that interactions between sleep quality, the immune system, and neurodegenerative disease are complex and a challenge to distill. These interactions are frequently bidirectional, because of sleep's characterization as an early symptom and as a potential factor contributing to the development and progression of mood and cognitive disorders.[9] Rachel Leproult et al revealed that sleep restriction results in metabolic and endocrine alteration, including decreased insulin sensitivity, increased evening concentration of cortisol, increased levels of ghrelin, decreased levels of leptin and increased hunger and appetite.[10] Jean-Philippe Chaput stated that multiple connections exist between sleep hygiene factorss, eating behavior and energy balance.[11] Yukihiro Tanikawa et al.

asserted that Workers with overweight or obesity, a night/shift work schedule was associated with a lower motivation for behavioral change in lifestyle and the association was strengthened in those with long working hours.[12] Patel SR expressed that short sleep duration appears independently associated with weight gain, particularly in young age groups.[13] KAP study conformed to the findings as cited in literary evidence. [3]

As enunciated in [3] daytime naps must be avoided. But KAP study revealed that 43% takes daytime naps and 57% did not have that habit. [3] emphasized that oleation is recommended for 4 days once. Study showed that 61% follows the habit of taking oil bath and 39% were poor followers. Siddha literature advocates waking up by 4:30 to 6:00 am as per Siddha literature. KAP study revealed that 16% were good followers and 84% were poor followers.

CONCLUSION

Good sleeping practices enunciated in Siddha literature were found not to be followed in day-to-day life by majority of people. This may be the reason for poor quality of sleep. Moreover, in many with sleep deprivation had ill effects as mentioned in the literature. Therefore, KAP study revealed that good sleeping habits are fundamental for a sound and healthy lifestyle.

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